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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,332	09/12/2003	Masayuki Momiuchi	463P107	8047

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EXAMINER	
VAN ROY, TOD THOMAS	
ART UNIT	**PAPER NUMBER**
2828	

DATE MAILED: 07/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/661,332	MOMIUCHI, MASAYUKI	
	Examiner	Art Unit	
	Tod T. Van Roy	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *01/26/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 9-12 recite the limitations "said reflection plate" or "said optical crystal member" or "said passive Q-sw element" beginning in the second line of each. There is insufficient antecedent basis for the limitations in the claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4-5, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishimori et al. (US 5351259).

With respect to claim 1, Ishimori discloses a semiconductor laser device, comprising a semiconductor laser array for excitation having a plurality of semiconductor laser elements (fig.1 #11), and an optical resonator having a solid-state

laser medium (fig.1 #13) with a reflection mirror formed on one end surface (fig.1 #13e) and an output mirror provided in parallel to said reflection mirror (fig.1 #15), wherein laser beams emitted from the plurality of said semiconductor laser elements enter said optical resonator independently from each other, and the laser beams are respectively amplified and are projected by said optical resonator (col.3-4 lines 52-19).

With respect to claim 4, Ishimori discloses the semiconductor laser device as outlined in the rejection to claim 1, and further discloses a reflection plate arranged to correspond to the solid-state laser medium, and said output mirror is formed on said reflection plate (fig.1 #15, col.3 lines 49-51).

With respect to claim 5, Ishimori discloses the semiconductor laser device as outlined in the rejection to claim 1, and further discloses an optical crystal member for wavelength conversion (col.5 lines 20-22) is provided between said reflection mirror and said output mirror (fig.10 #19).

With respect to claim 8, Ishimori discloses the semiconductor laser device as outlined in the rejection to claim 1, and further discloses the solid-state medium to be designed in a planar shape (col.3 lines 37-40).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 6-7, and 9-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishimori in view of Marshall et al. (US 6061378).

With respect to claims 6-7, Ishimori teaches the semiconductor laser device as outlined in the rejection to claim 1, including the optical crystal member being disposed between the reflection and output mirrors. Ishimori does not teach a Q-sw to be located between the mirrors as well. Marshall teaches a semiconductor laser device wherein a Q-sw is located between the reflection and output mirrors (fig.1 #37). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the device and crystal location of Ishimori with the Q-sw of Marshall in order to allow for switching control during long-range communications (requiring higher power bursts), or high power buildup for industrial usage (Marshall, lines 17-22).

With respect to claims 9-12, Ishimori teaches the semiconductor laser device as outlined in the rejection to claim 1, and further teaches the optical elements to be planar (reflection plate-col.4 lines 44-45, optical crystal-as seen in fig.10 #19). Ishimori does not teach the optical elements to be piled together. Marshall teaches a semiconductor

laser device in which the optical elements are piled together (col.4 lines 52-55, col.5 lines 7-9). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the semiconductor laser device of Ishimori with the piled optical elements of Marshall to all but eliminate need for optical alignment (Marshall, col.4 lines 57-58).

With respect to claims 13-15, Ishimori teaches the semiconductor laser device as outlined in the rejection to claim 1, and further teaches the optical elements to be planar (reflection plate-col.4 lines 44-45, optical crystal-as seen in fig.10 #19). Ishimori does not teach the optical elements to be piled together using a film spacer. Marshall teaches the piling of the optical elements, as outlined in the rejection to claims 9-12, and further teaches the piling to be done using bonding (col.4 lines 52-55, where it is well known that a simple adhesive film is an example of a bonding agent, wherein that film would then form the spacer). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the semiconductor laser device of Ishimori with the bonded, piled optical elements of Marshall in order to insure the stability, and reinforce the placement, of the said elements.

With respect to claim 16, Ishimori teaches the semiconductor laser device as outlined in the rejection to claim 1, including arranging the semiconductor laser array so the fast axis directions of all the beams concur with each other (fig.1), and the use of a rod-type lens provided in parallel with the semiconductor laser element. Ishimori does not teach the lens to converge the light from the semiconductor lasers, but rather from the solid-state medium. Marshall teaches a semiconductor device in which it is taught

that a lens may be used between the semiconductor lasers and the solid-state medium (col.5 lines 28-30). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the semiconductor laser device of Ishimori with the lens placement of Marshall in order to focus, and increase, the light coupled from the semiconductor laser array into the high-gain region of the solid-state medium (Marshall, col.5 lines 28-30).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishimori in view of Craig et al. (US 5761234).

With respect to claim 2, Ishimori teaches the semiconductor laser device (or single light emitting unit) as outlined in the rejection to claim 1, but does not teach combining the output beams of two or more units. Craig teaches a semiconductor device using solid-state medium pumping (col.2 lines 46-51), in which the semiconductor array (fig.1 #15a-z) and the pumped solid-state medium (fig.1 #18 in each section) outputs are combined (in fiber #19) using an optical element (fig.1 #14). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the single light emitting unit of Ishimori with the arrayed, and combined output, light emitting units of Craig in order to provide system stability by way of built in redundancy (Craig, abs.).

Claims 3 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishimori and Craig and further in view of Beach (US 5689522).

With respect to claims 3 and 17, Ishimori and Craig teach the semiconductor laser device as outlined in the rejection to claim 2, including combining the outputs of the multiple light emitting units (4 subunits, or 2 full units shown in fig.1 of Craig) into optical fibers, but do not teach the beams to be joined by fiber bundling. Beach teaches a semiconductor laser array in which the individual array element beams are combined using a fiber bundling technique (fig.1a, col.3 lines 14-24). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the semiconductor laser device of Ishimori and Craig with the fiber bundles of Beach in order to provide an alternative and alignment free method of combining the output beams, rather than using optics (as in Craig).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tod T. Van Roy whose telephone number is (571)272-8447. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Harvey can be reached on (571)272-1835. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TVR

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PRIMARY EXAMINER